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(54) **METHOD AND SYSTEM FOR NON DISRUPTIVELY ASSIGNING LINK BANDWIDTH TO A USER IN A HIGH SPEED DIGITAL NETWORK**

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Related U.S. Application Data

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(30) **Foreign Application Priority Data**

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(58) **Field of Search** 370/230, 232, 370/233, 234, 465, 468, 431, 437, 443, 444

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,231,631 * 7/1993 Buhrke et al. 370/230

5,359,592	* 10/1994	Corbalis et al.	370/233
5,638,363	* 6/1997	Gittins et al.	370/358
5,687,167	* 11/1997	Bertin et al.	370/443
5,699,355	* 12/1997	Natarajan	370/443
5,742,594	* 4/1998	Natarajan	370/443
5,748,629	* 5/1998	Caldara et al.	370/389
5,841,777	* 3/1999	Cohen	370/443
5,850,398	* 12/1998	King, Jr.	370/230
5,881,050	* 3/1999	Chevalier et al.	370/230
5,905,730	* 5/1999	Yang et al.	370/235
5,909,443	* 6/1999	Fichou et al.	370/412
5,912,894	* 6/1999	Duault et al.	370/468

* cited by examiner

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(57) **ABSTRACT**

A method based on predefined connection priorities for assigning link bandwidth to a requesting user in a high speed digital network interconnecting network users through a path including network nodes connected through high speed links.

According to this method, a predefined reservable link bandwidth is split into so-called nominal bandwidth portions and common bandwidth portions, both assignable to the same connections on a priority basis. Each of the common bandwidth priorities is individually related to a nominal bandwidth priority through a predefined relationship, making the common bandwidth priorities always lower than any nominal priority. In this way the requested link connection bandwidth, whatever be its nominal priority, is made preemptable primarily on all common bandwidth, thus avoiding the disruption of any network connection which is already established.

7 Claims, 10 Drawing Sheets